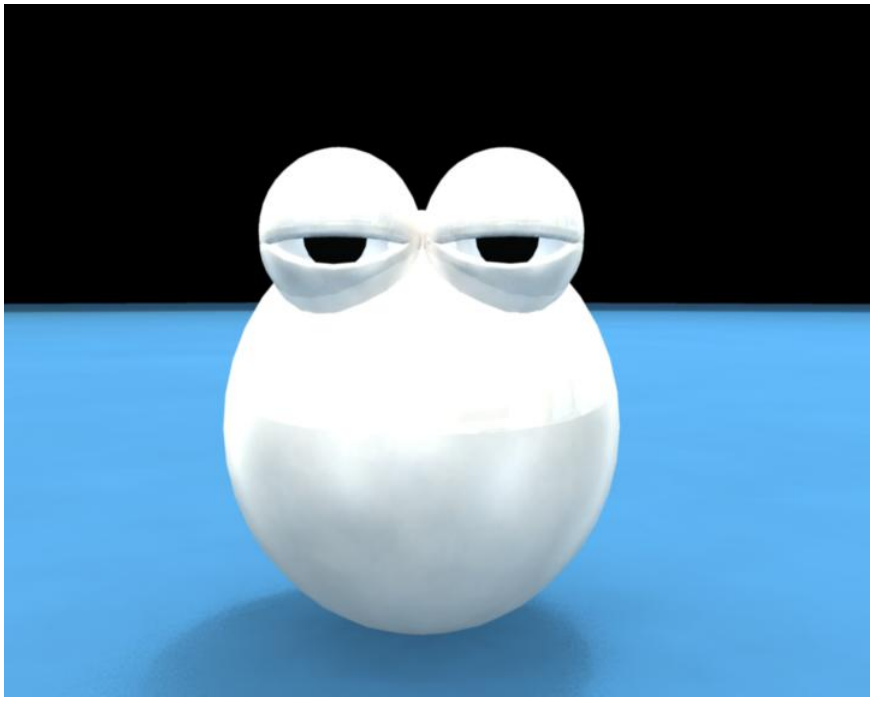
The Smart White Ball



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Asmund Herikstad
Zhang Chenxi

Storyboard

- Guy playing pool, walks away. White ball comes alive and ‘swap’ its color with the black ball.
- Guy comes back, shoots the ‘white’ ball and gets a surprise with the white paint trail…

Main Effects

- Morphing
  - Replace the real white ball into a CG ball and morph its hands & eyes out
- Animation
  - Real cue stick hitting the CG ball and cause the animation

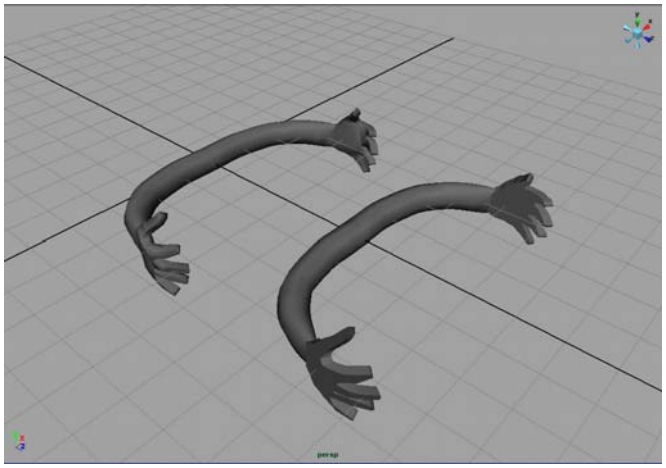
Watch Effect Video

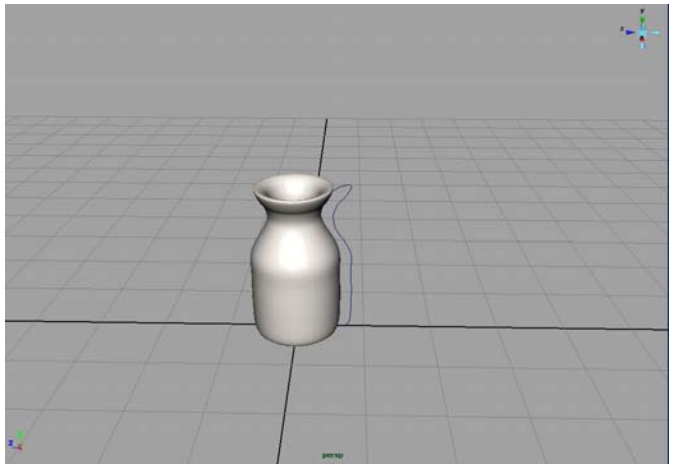
Shooting of Real Footage

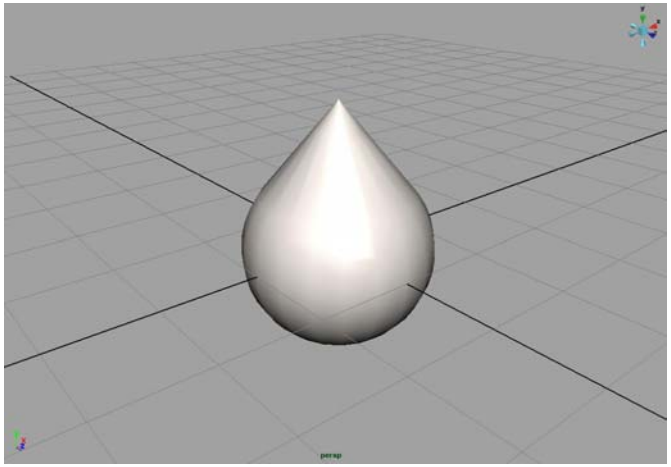
- Use the public pool table at YIH student lounge
- Problem with having a consistent lighting during shoot
- To refine it during video editing

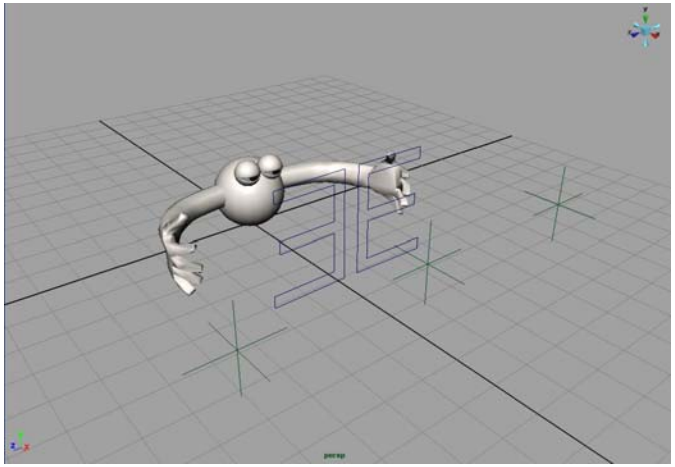
Modeling

- All models are the same size (1.0,1.0,1.0 scale)
- “Resizing” is done by repositioning the camera
- Complex models were modeled separately in different scenes and then combined to be animated.



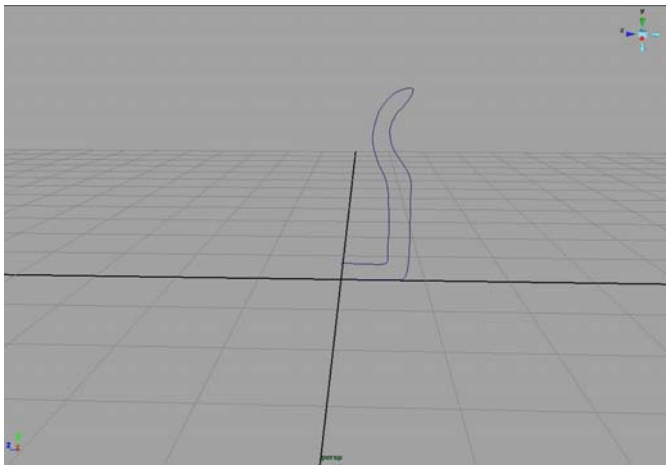


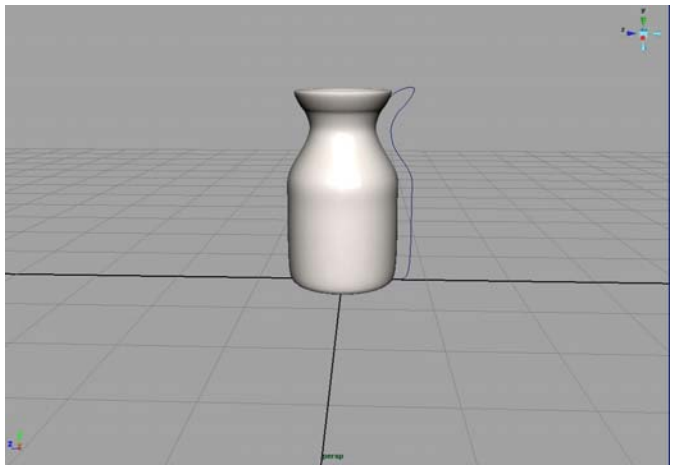


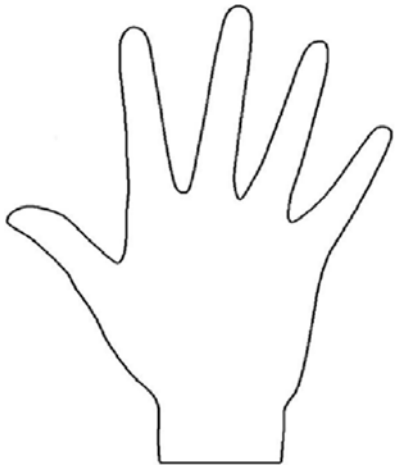


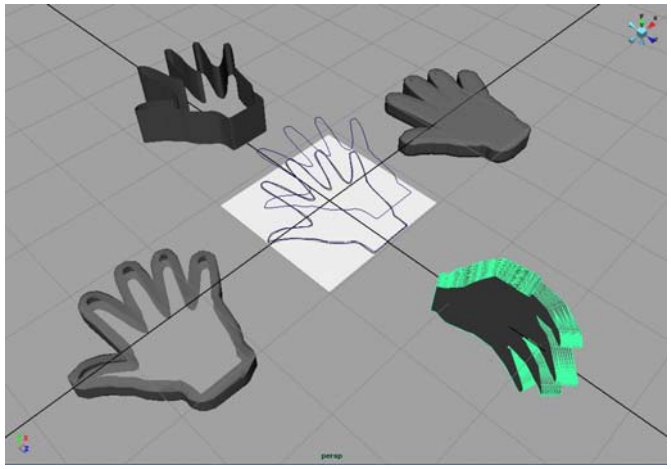
Modeling techniques

- Curves revolved (the arms and bottle).
- Curve and using loft effect.
- Modifying vertices of primitives.



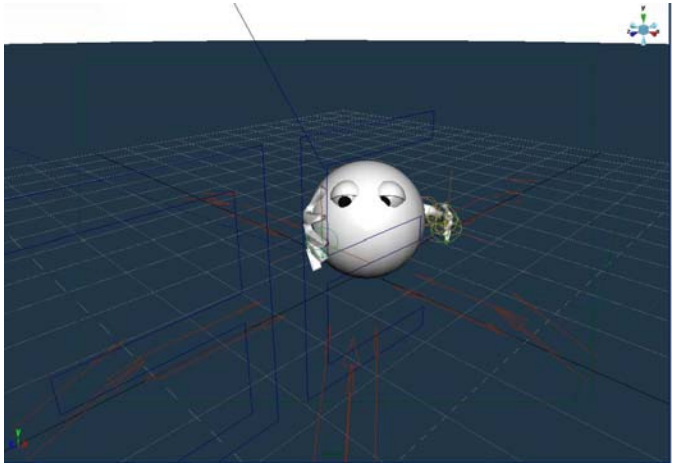


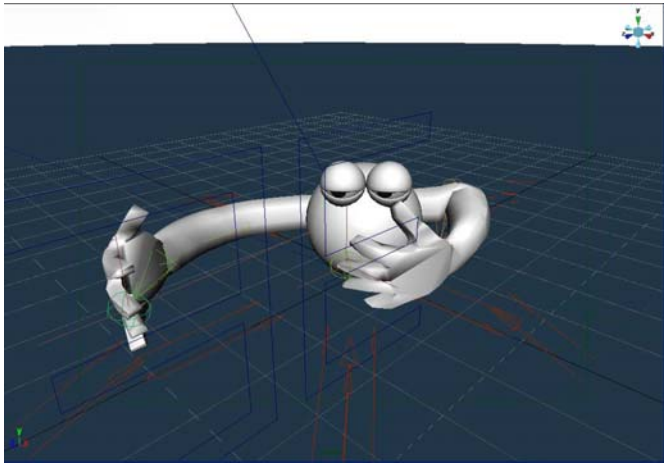




The Arms

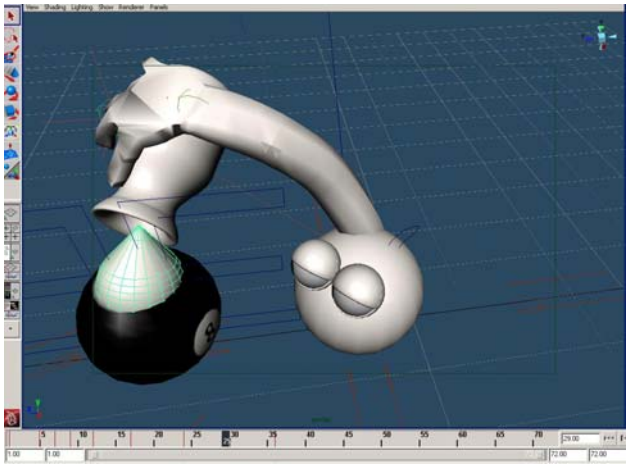
- Making the arms seem to grow by scaling them and using key frames.
- Moving the arm towards the body by modifying the skeleton.

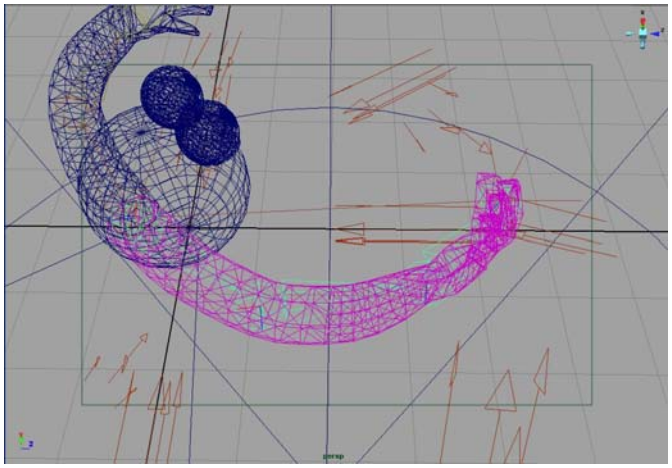


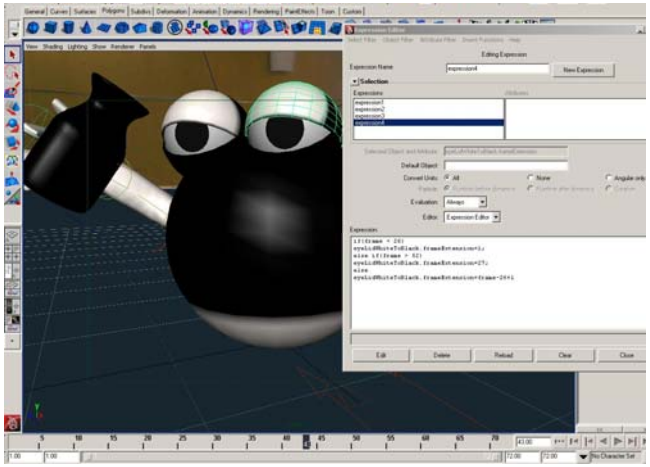


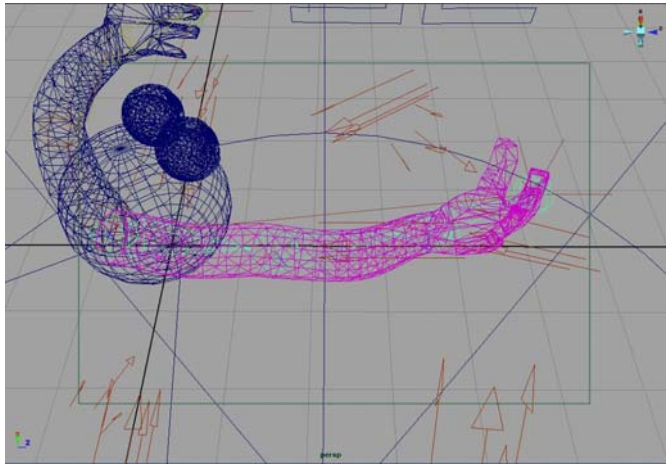
Animation techniques

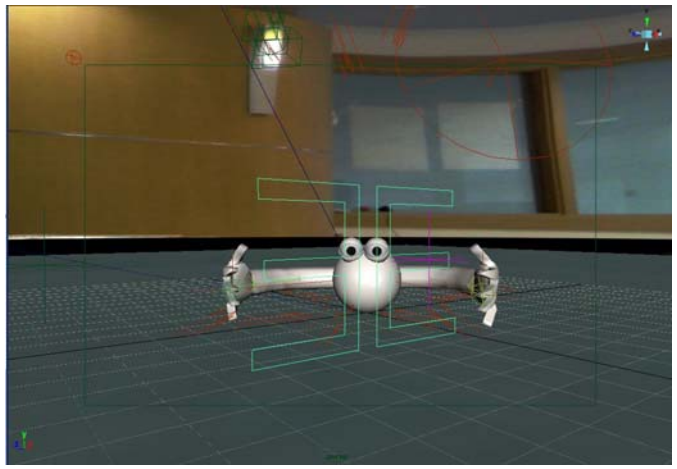
- Key framing
- Skeleton
- Expressions
- Constraints (moving the eyes)
- Animated textures

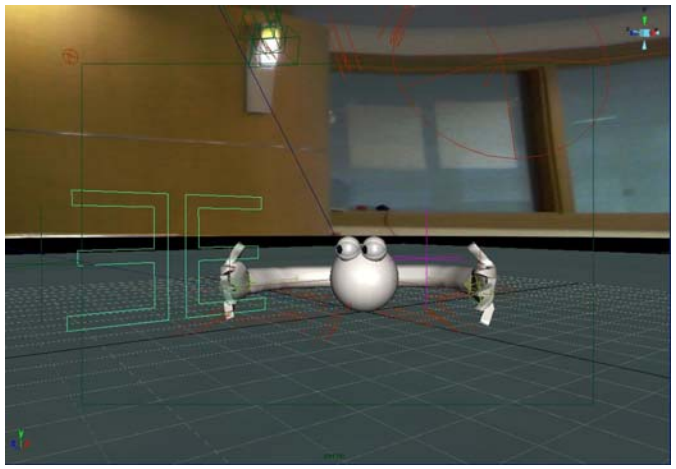






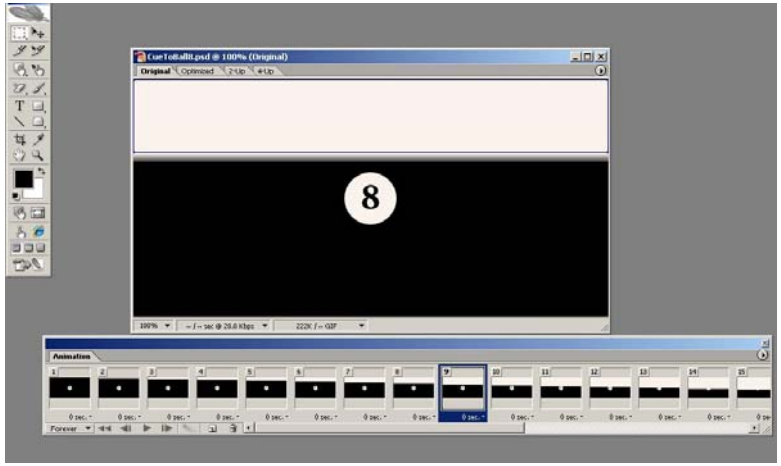


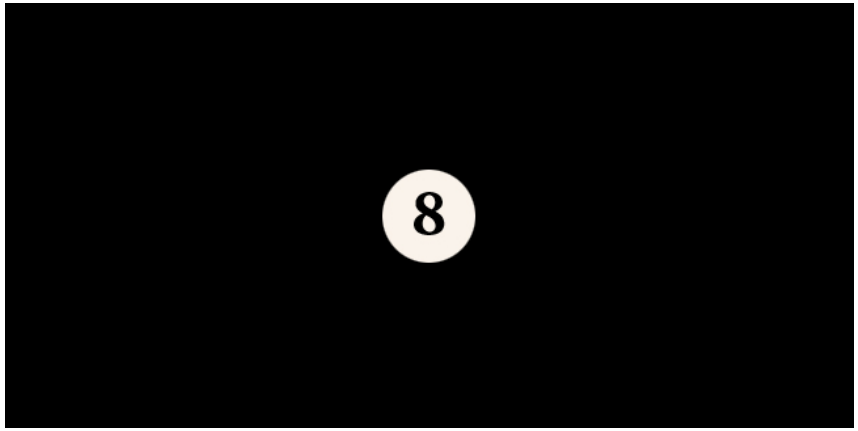




Animated Textures

- Creating image sequences with Adobe Photoshop and ImageReady
- Add textures to objects in Maya and add an expression to select which part of the sequence to show at what time.


CueToBallB.psd @ 100% (Original)
Original
Optimized
2-Up
4-Up
8
Animation
Forever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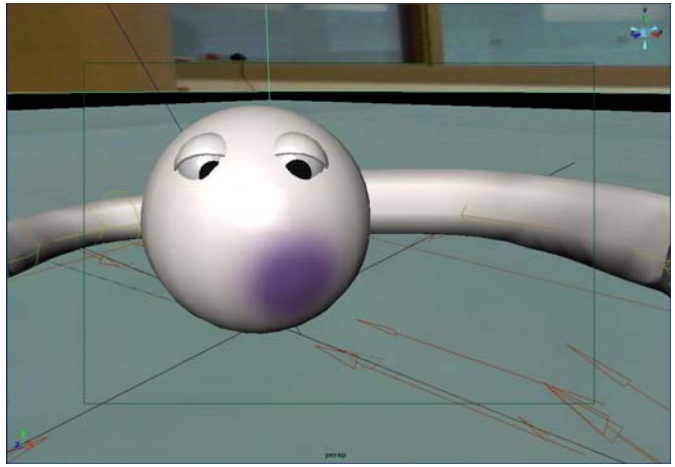
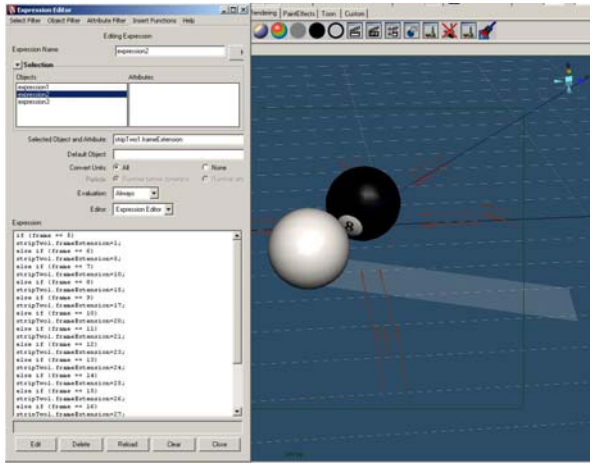
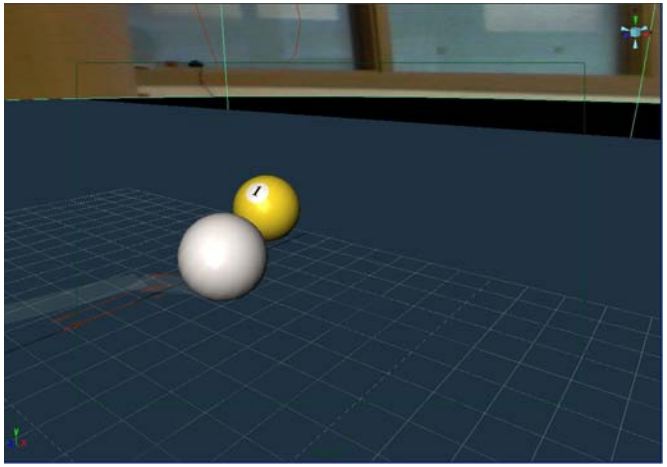
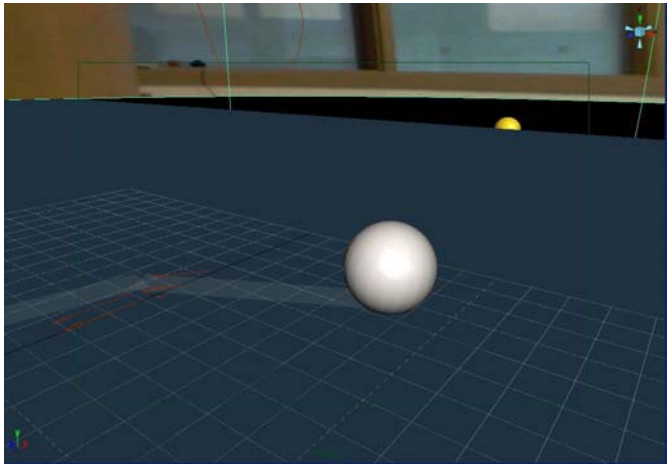

persp

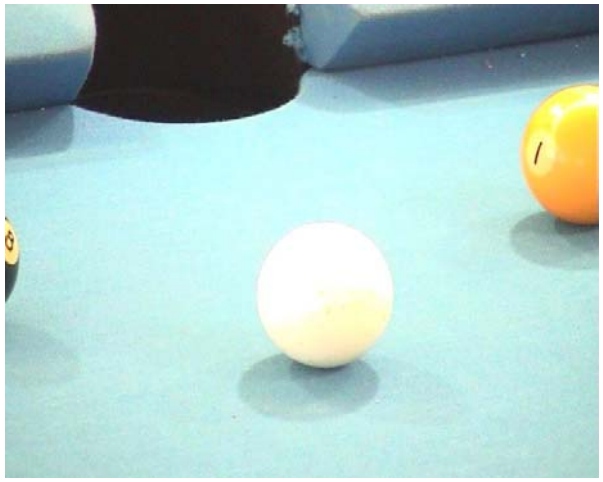


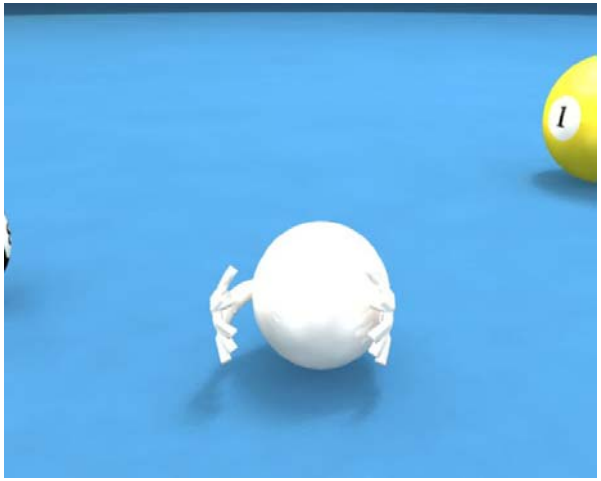


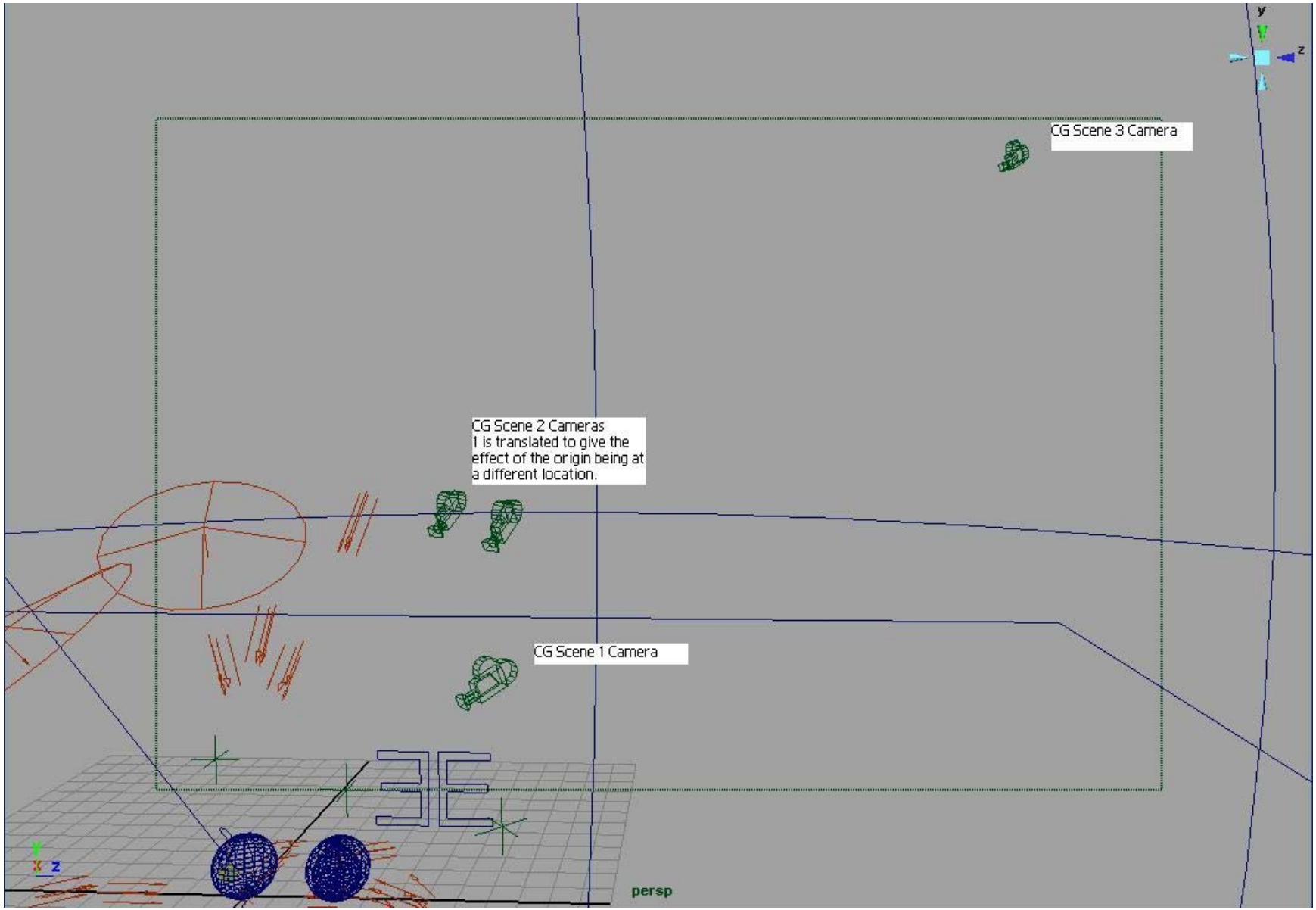


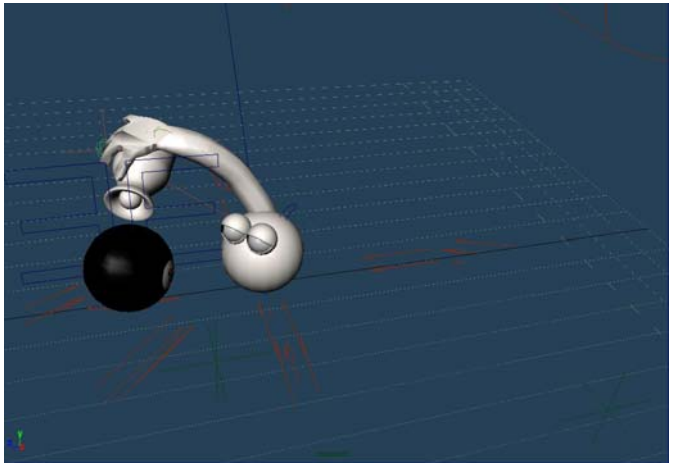
Camera-angles

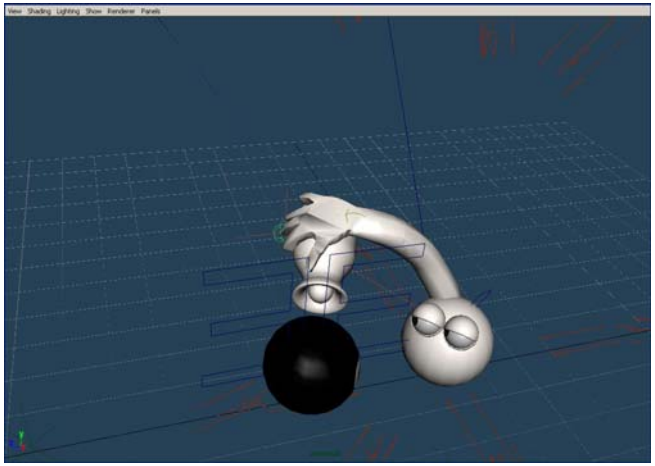
- 3 camera angles and 4 cameras.
- Camera positions were selected by rendering images and comparing to the filmed images. Much done by eye.





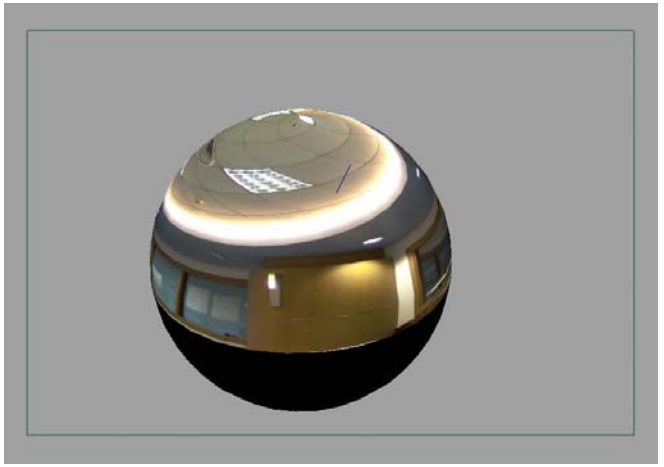

CG Scene 3 Camera
CG Scene 2 Cameras
1 is translated to give the
effect of the origin being at
a different location.
CG Scene 1 Camera
persp





Rendering

- Many light sources, positions similar to real life setup.
- HDRI sphere to create realistic lighting and reflection
- Rendered using ray tracing using mental ray.



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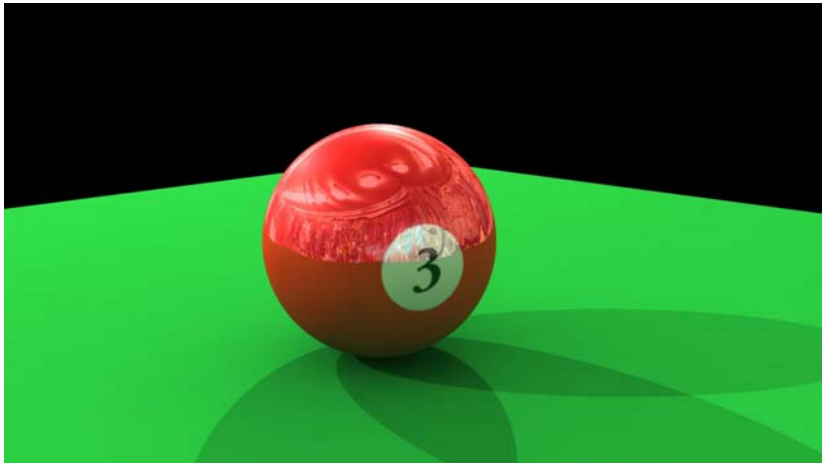
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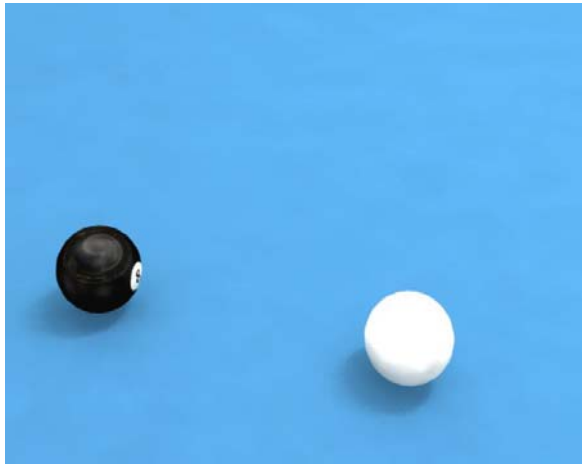
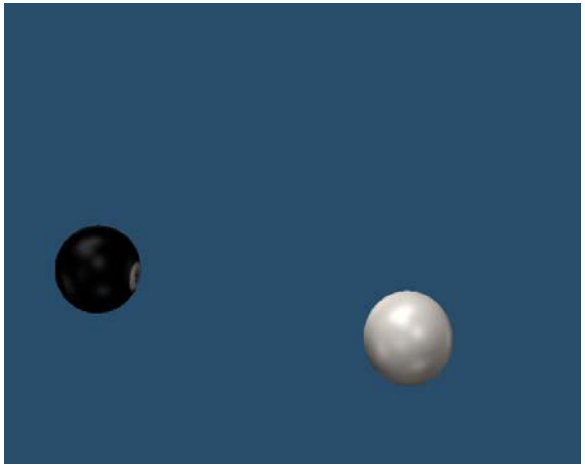
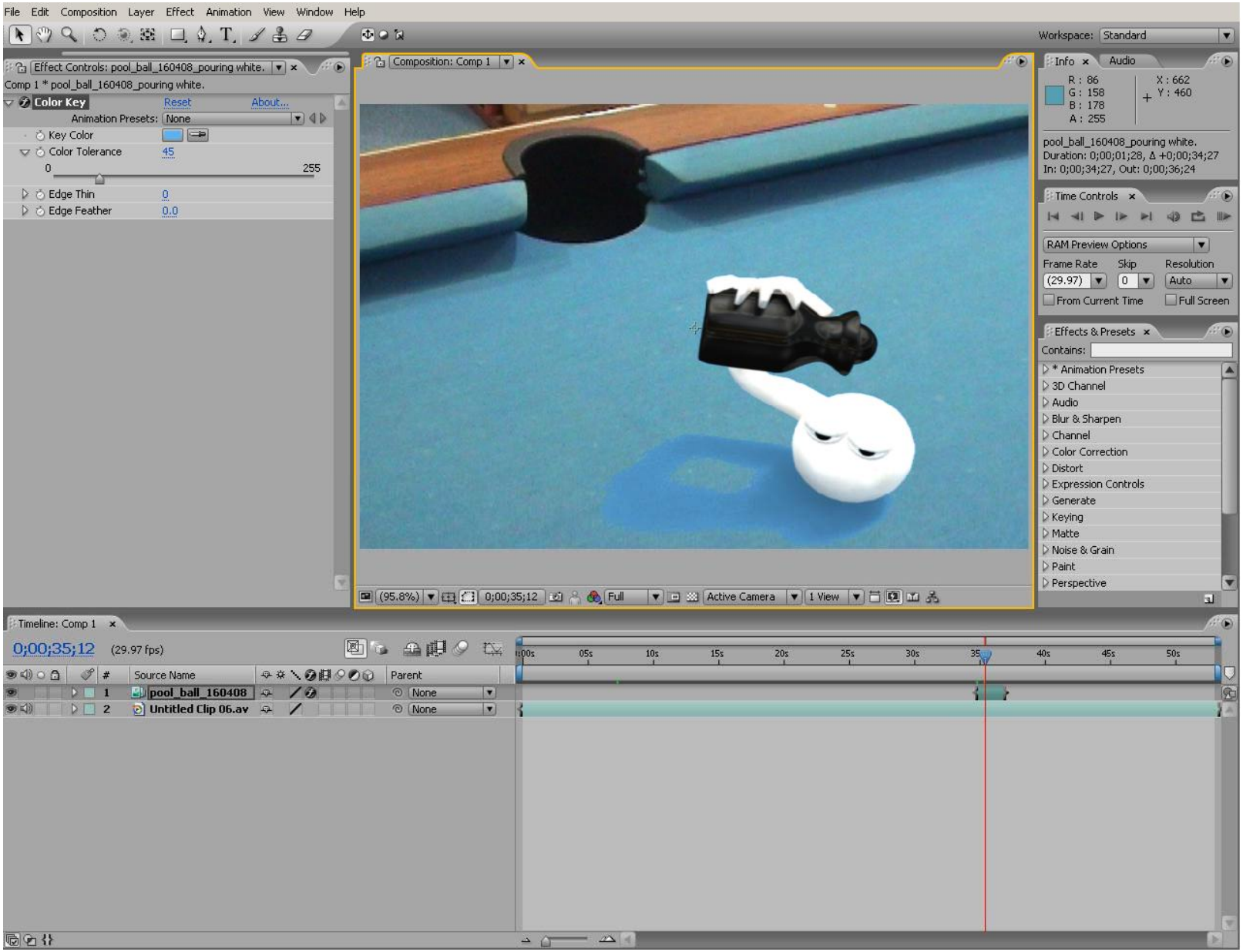




Adobe After Effects

- Plan was to make shadows in After Effects, but found that we could use Color Keying. So we used After Effects to remove CG plane
- Also used After Effects with Premiere Pro to composite CG and real video.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Comp 1 * pool_ball_160408_pouring white.
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Reset
About...
Animation Presets: None
Key Color
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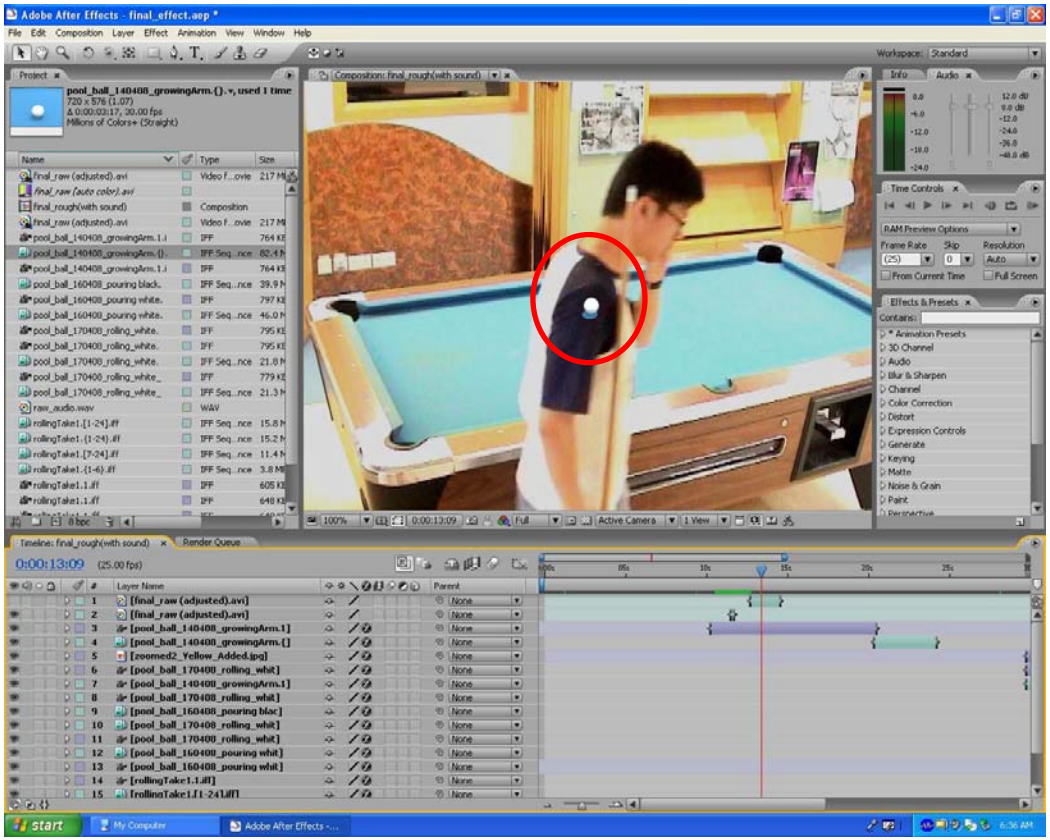
Composition: Comp 1
(95.8%) 0;00;35;12 Full Active Camera 1 View
Info
Audio
R : 86
G : 158
B : 178
A : 255
X : 662
Y : 460
pool_ball_160408_pouring white.
Duration: 0;00;01;28, Δ +0;00;34;27
In: 0;00;34;27, Out: 0;00;36;24
Time Controls
RAM Preview Options
Frame Rate
Skip
Resolution
(29.97) 0 Auto
From Current Time
Full Screen
Effects & Presets
Contains:
* Animation Presets
3D Channel
Audio
Blur & Sharpen
Channel
Color Correction
Distort
Expression Controls
Generate
Keying
Matte
Noise & Grain
Paint
Perspective
Timeline: Comp 1
0;00;35;12
(29.97 fps)
Source Name
Parent
1 pool_ball_160408 None
2 Untitled Clip 06.av None

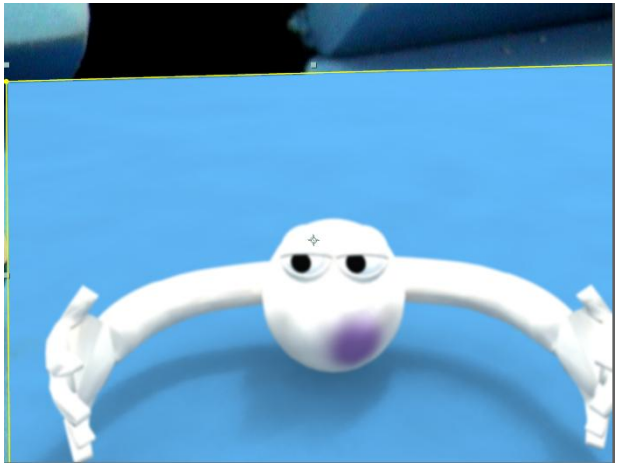
Compositing

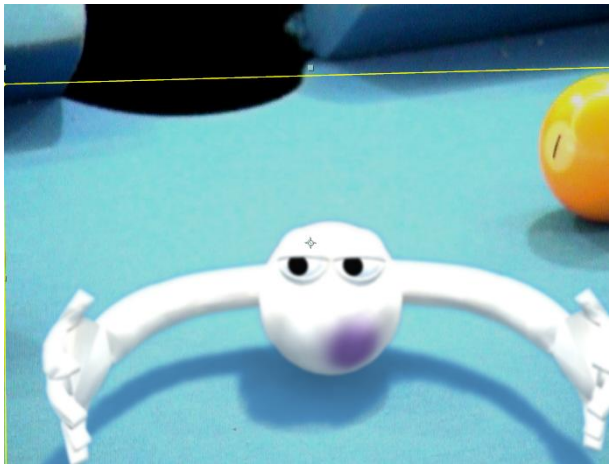
- Difficulty Encounter
  - Many of the different scenes have different lighting balance, tried using Auto level & Auto color to smooth everything.
  - Few frames need to adjust the brightness & contrast manually

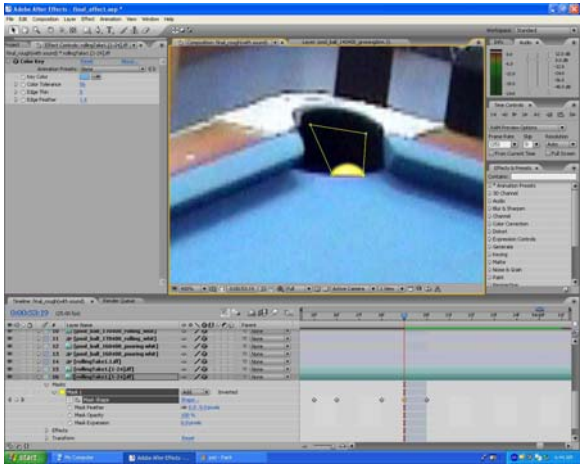
Using of layers and masking

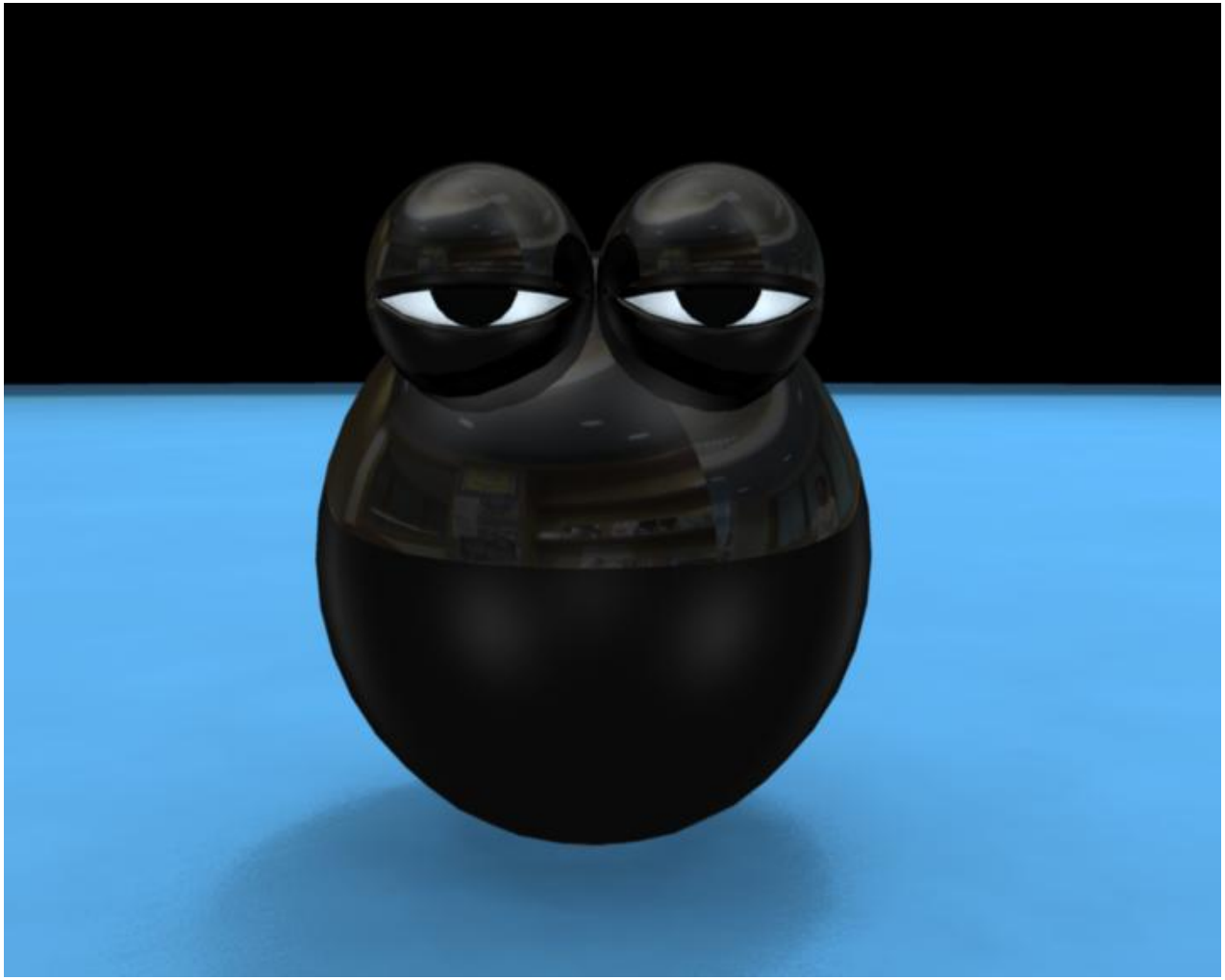


Color keying & Masking







Putting CG on blank plate

Any Questions?